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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,851	11/18/2003	Satoshi Arakawa	Q78507	3709
23373	7590	10/24/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			LEE, SHUN K	
			ART UNIT	PAPER NUMBER
			2884	

DATE MAILED: 10/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,851

Applicant(s)

ARAKAWA, SATOSHI

Examiner

Shun Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1103.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 100. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Neyens *et al.* (US 5,517,034).

It should be noted that the specification discloses (pg. 5, lines 8-17) that "Said rate of change δ_o of the intensity of the stimulated emission to a given change of the

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wavelength of the stimulating light is a value obtained by dividing the inclination α_0 of a tangent at a particular wavelength λ_0 of a curve F representing the relation between the wavelength λ of the stimulating light and the intensity G of the stimulated emission emitted from the radiation image convertor panel exposed to a certain amount of stimulating light by the intensity G_0 of the stimulated emission at the particular wavelength λ_0 as shown in FIG. 3. That is, $\delta_0 = \alpha_0/G_0$.

In regard to claims 1 and 2, Neyens *et al.* disclose (column 1, lines 46-60; column 2, lines 51-57) a radiation image read-out apparatus which comprises a radiation image convertor panel, a stimulating light projecting means which projects stimulating light onto the radiation image convertor panel, and a detecting means which detects stimulated emission emitted from the radiation image convertor panel upon exposure to the stimulating light beam and reads out a radiation image recorded on the radiation image convertor panel, wherein the stimulating light projecting means projects, onto the radiation image convertor panel, stimulating light at an optimal wavelength for photostimulation (*i.e.*, the optimal wavelength for photostimulation of the radiation image convertor panel is the wavelength of the peak or maximum of the stimulation spectrum). It should be noted that the inclination α_0 of a tangent at the maximum of the stimulation spectrum is zero and thus the rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light is $\delta_0 = \alpha_0/G_0 = 0$. Therefore, stimulating light having a wavelength at the peak or maximum of the stimulation spectrum inherently have a $\delta_0 = 0$ which is not larger than 1.0%/nm and is not smaller than -1.0%/nm (or is from -0.5%/nm to 0.5%/nm).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (US 4,780,376) in view of Neyens *et al.* (US 5,517,034).

In regard to claims 1 and 2, Nakamura discloses (column 8, lines 1-66) a radiation image read-out apparatus which comprises a radiation image convertor panel, a stimulating light projecting means which projects stimulating light onto the radiation image convertor panel, and a detecting means which detects stimulated emission emitted from the radiation image convertor panel upon exposure to the stimulating light beam and reads out a radiation image recorded on the radiation image convertor panel. While Nakamura also discloses (column 6, lines 37-55) that a source of stimulating rays having a wavelength is suitably selected according to the purpose, the apparatus of Nakamura lacks an explicit description that the stimulating light projecting means projects, onto the radiation image convertor panel, stimulating light in a wavelength range where the rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light is not larger than 1.0%/nm and is not smaller than -1.0%/nm (or is from -0.5%/nm to 0.5%/nm). However, Neyens *et al.* teach (column 1, lines 46-60; column 2, lines 51-57) a stimulating light projecting means for projecting onto the radiation image convertor panel, a stimulating light at an optimal

wavelength for photostimulation (*i.e.*, the optimal wavelength for photostimulation of the radiation image convertor panel is the wavelength of the peak or maximum of the stimulation spectrum). It should be noted that the inclination α_0 of a tangent at the maximum of the stimulation spectrum is zero and thus the rate of change of the intensity of the stimulated emission to a given change of the wavelength of the stimulating light is $\delta_0 = \alpha_0/G_0 = 0$. Thus, stimulating light having a wavelength at the peak or maximum of the stimulation spectrum inherently have a $\delta_0 = 0$ which is not larger than 1.0%/nm and is not smaller than -1.0%/nm (or is from -0.5%/nm to 0.5%/nm). Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a stimulating light having the wavelength of the maximum of the stimulation spectrum in the apparatus of Nakamura, in order to obtain the optimal wavelength for photostimulation of the radiation image convertor panel.

In regard to claims 4 and 5 which are dependent on claim 1, Nakamura also discloses (column 3, line 59 to column 4, line 2) that the radiation image convertor panel has a stimuable phosphor layer formed of alkali halide stimuable phosphors represented by formula $MX:A$, wherein M represents at least one of K, Rb and Cs, X represents at least one of Cl, Br and I, and A represents Eu^{2+} or Tl^+ .

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (US 4,780,376) in view of Neyens *et al.* (US 5,517,034) as applied to claim 1 above, and further in view of Research Disclosure 308117 (Read-out of photostimulable latent fluorescent images, December 1989, 3 pages).

In regard to claim 3 which is dependent on claim 1, the modified apparatus of Nakamura lacks that the stimulating light projecting means comprises a plurality of stimulating light sources which emit stimulating light of different wavelengths and projects synthesized stimulating light including the stimulating light of different wavelengths onto the radiation image convertor panel so that the stimulating light of different wavelengths are simultaneously projected on the same position on the radiation image convertor panel. Research Disclosure 308117 teaches (pg. 3) to provide a stimulating light projecting means comprising a plurality of stimulating light sources which emit light of different wavelengths and projects synthesized light including the light of different wavelengths onto the radiation image convertor panel so that the light of different wavelengths are simultaneously projected on the same position on the radiation image convertor panel and wherein the synthesized light includes light of a difference-frequency, in order to photostimulate at the stimulation maximum of the radiation image convertor panel. Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to provide a plurality of stimulating light sources in the modified apparatus of Nakamura, in order to obtain the optimal wavelength for photostimulation of the radiation image convertor panel.

Conclusion

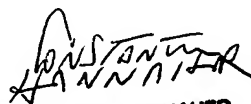
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shun Lee whose telephone number is (571) 272-2439. The examiner can normally be reached on Tuesday-Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SL


CONSTANTINE HANNAHER
PRIMARY EXAMINER